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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/648,368	08/25/2000	Frank Prechtl	195687US0	4672
22850	7590	12/15/2003		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER AKKAPEDDI, PRASAD R				
ART UNIT		PAPER NUMBER		
2871				

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/648,368	PRECHTL ET AL.	
	Examiner	Art Unit	
	Prasad R Akkapeddi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 24-35 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 and 28-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 21 and 24-27 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-8, 21 and 24-27 in Paper No. 09/02/2003 is acknowledged. The traversal is on the ground(s) that (a) the Applicant fails to see a different process of making the film as suggested in the Office Action dated 07/30/2003 and (b) the Office has failed to provide reasons or examples to support the distinction between III and Group II. This is not found persuasive because (a) The Examiner already cited a possible different process of making the product and (b) The Examiner also indicated previously that claims 30-35, corresponding to Group III belong to a different class thus requiring separate search and causing undue burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Takizawa et al. (Takizawa) (U.S. Patent No. 5,631,665).

As to claim 1: Contrary to the applicant's arguments in the remarks filed 03/26/2003, the Examiner still is of the opinion that the teachings of Takizawa meet the intent of the recited features in claim 1. Takizawa's composite film (1)

consists of a cholesteric liquid crystal (col.6, lines 63-67 and col. 7, lines 1-10), a layered structure (col. 6, lines 54-55), cross-linking induced by external stimuli such as ultraviolet rays or heat (col. 6, lines 49-50) and no color shift at high temperature is also disclosed in (col. 13, lines 5-15). Hence, Takizawa's teachings do meet the intent of claim 1, in the opinion of the Examiner.

As to claim 2: Takizawa discloses a high temperature environment of 100 degrees Centigrade or higher (warming) (col. 13, line 7), thus meeting the recited limitation of external stimuli selected from changes in temperature, in particular warming.

As to claim 5: Takizawa discloses that the thickness of the composite film must be at least as large as the wavelength of visible light. Wavelength of visible range is about 0.4 to 0.65 micrometers. Hence, Takizawa's film is less than 1 or 2 micrometers as recited in the instant claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,6,7,24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Leigeber et al. (Leigeber) (U.S.Patent No. 6,071,438).

As to claim 3: Takizawa teaches that the cholesteric composite film (1) exhibits no color shift with temperature. However, Takizawa does not disclose Xylene as a solvent.

Leigeber in disclosing a process for the production of three-dimensionally crosslinked polmeric materials having broad reflection bands and polarizers, discloses Xylene as a solvent and evaporation at 90 degrees Centigrade for two minutes (col. 8, lines 1-5).

As to the recited limitations “ (a) change in temperature in the range from –30 to 250 degrees Centigrade (b) warming to temperatures in the range from 80 to 160 degrees Centigrade with simultaneous exposure to a diluent and (c) treatment for 15 minutes at 80 degrees Centigrade in Xylene followed by drying, it has been recognized that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

As to claims 6-7: Takizawa does not disclose that the cholesteric layer has a mean dry layer thickness and layers having identical thicknesses.

Leigeber discloses pitch of the helix and its relationship to the layer thickness (col. 1, lines 19-32) and plurality of cholesteric polymer films having

thickness of from 5 to 200 micrometers, particularly preferably from about 15 to 80 micrometers, hence identical thickness and identical composition is possible in the teachings of Leigeber.

As to claims 24 and 25: Takizawa does not disclose the application of the cholesteric films as polarizer.

Leigeber discloses the application of these cholesteric films as polarizers and discloses a support material (film) (col. 4, lines 51-53). The thickness is in the range of 5 to 80 micrometers which overlaps the recited range of 2 to 50 micrometers and the reflection maxima has to be matched, if the polarizer has to work as a single unit as shown in Fig. 2.

Note that the range for the thickness value as disclosed by Leigeber overlaps the range of about 2 to 50 micrometers (asserted in claim 25).

Therefore, the range in claim 25 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the structure of these films as disclosed by Leigeber to the films of Takizawa to produce optically active layers whose band width covers the entire visible spectral region of light having less complexity and inexpensively (col. 2, lines 5-11).

6. Claims 8 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa in view of Muller-Rees et al. (Muller-Rees) (U.S. Patent No. 5,851,604).

As to claims 8 and 21: Takizawa's crosslinked aligned cholesteric layer does not contain cholesteric pigment.

Muller-Rees in disclosing interference pigments comprising molecules fixed in a cholesteric configuration, discloses pigments having a very wide range of particle sizes and particle distributions (col. 10, lines 65-67), for example: sizes ranging from 5 to 500 micrometers (col. 7, lines 31-32) having a pigment thickness of 1 to 20 micrometers (col. 4, lines 16-19). Muller-Rees also discloses attenuation of color effects (no color shift) when these pigments are overlaid by diffuse reflection (col. 10, lines 30-32 and 43-44).

Muller-Rees also discloses additional components added to these pigments to obtain different colors and to achieve different color effects (cols. 11-20).

Note that the range for the particle size and thickness values as disclosed by Muller-Rees overlaps the range of about 5 to 50 micrometers and 02 to 5 micrometers (asserted in claim 8). Therefore, the range in claim 8 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt cholesteric pigments as disclosed by Muller-Rees to the films of Takizawa to achieve very diverse color effects on any desired surfaces that brings about a depth effect of the gloss exceeding any effects previously realized (col. 5, lines 39-46).

Allowable Subject Matter

7. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

A search of the prior art did not disclose 'a cholesteric layered material wherein the reflection maximum of the cholesteric layer after the xylene treatment can be shifted by not more than about 10 nm into higher or lower wavelength region'.

8. Claims 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments regarding claim 1 filed 09/02/2003 have been fully considered but they are not persuasive. The reasons were provided above in paragraph No. 3.

10. Applicant's arguments, see response, filed 09/02/2003, with respect to the rejection(s) of claim(s) 2-3, 5-8, 21 and 24-27 under 103(a) have been fully considered and are persuasive, due to the supplied English translation of the priority document.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Leigeber and Muller-Rees.

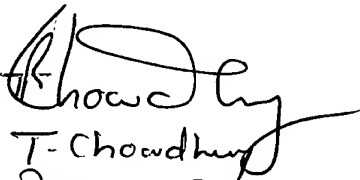
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

BRP

Prasad R Akkapeddi, Ph.D
Examiner
Art Unit 2871


T. Chowdhury
Primary Examiner